

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Learning Goal 7.1**

Applying one or more transformations to an exponential function, including translations, stretches and reflections.

**More Questions**

1. A culture of bacteria triples every 25 hours. The initial count of a sample shows 1000 bacteria.
  - a. Write an exponential function that models the given conditions.
  - b. Approximate how many bacteria will be there in 4 days?
  - c. How long does it take for the population to double?
  
2. An investment of \$500 is earning an interest at 6% annually, compounded monthly.
  - a. Write as an exponential function
  - b. Graph the function. Determine the value of the investment after 5 years.
  - c. Determine how long it would take for the investment to double.
  - d. How long would it take for the investment to double if the interest is compounded daily?
  
3. The population of BC is approx. 4.16 million in 2004. It is growing at a rate of 2.2% a year.
  - a. Write an equation expressing the population of BC and the number of years.
  - b. Determine when the population will become 5.5 million.

**General Formula for Compound Interest**

$$A = P \left( 1 + \frac{r}{n} \right)^{nt}$$